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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,661	07/25/2003	Hideki Hirayama	1794-0157P	1816

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EXAMINER	
KUNEMUND, ROBERT M	

ART UNIT	PAPER NUMBER
1722	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,661	HIRAYAMA ET AL.	
	Examiner	Art Unit	
	Robert M. Kunemund	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3 and 10* is/are allowed.

6)☒ Claim(s) *1, 2, 4-9 and 11-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 4, 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (5,389,571) in view of Nishizawa et al. (5,338,389).

The Takeuchi et al reference teaches a light-emitting device. The device is a layer structure made by deposition techniques. The emitting layer contains a dopant and is a Group III-V compound semiconductor. The device is also an ultraviolet emitter, note, and cols. 5 and 6. The difference between the instant claims and the prior art is the method used to create the device. However, the Nishizawa et al reference teaches the use of pulse chemical vapor deposition. Each element of the semiconductor is feed to the chamber separately and at a predetermined sequence, note, col3. The gases, which are feed, are sources for III, V and dopant elements. The sources can be metal

organic compounds such as TMGa, TMAl, Cp Mg, note col. 4. It would have been obvious to one of ordinary skill in the art to modify the Takeuchi et al device by the teachings of the Nishizawa et al reference to grow by pulse deposition in order to increase the control over the layer composition and thickness.

Claims 7, 8, and 11 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (5,389,571) in view of Nishizawa et al. (5,338,389).

The Takeuchi et al and Nishizawa et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the second dopant. However, the Nishizawa et al reference teaches the use of two dopants, Mg and Si, note col. 4. The dopant sequence in the process can also be varied. It would have been obvious to one of ordinary skill in the art to modify the Takeuchi et al device by the teachings of the Nishizawa et al reference to use two dopants in order to create the desired properties in the final device layer.

Claims 3 and 10 are allowed over the prior art of record.

Response to Applicants' Arguments

Applicant's arguments filed June 16, 2005 have been fully considered but they are not

persuasive.

Applicants' argument concerning the art not being in the same class is noted. However, both references are in the semiconducting manufacturing area. Both references are discussing Group III-V materials. On reference teaches a device, while

the other teaches the specific steps on making layers that go into a device. The two patents are related in technology.

Applicants' argument concerning the Nishizawa et al reference has been considered and not deemed persuasive. The reference does in fact teach using more then one dopant and clearly states that dopant orders along with all other gas orders can be varied. At no point, does the reference state there is one and only order.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Kunemund whose telephone number is 571-272-1464. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMK

ROBERT KUNEMUND
PRIMARY EXAMINER